



Attorney's Docket No.: 14921.0015

AF  
SFW

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Steven M. Knowles                          Art Unit: 3679  
Serial No.: 09/982,928                                  Examiner: David Bochna  
Filed: October 22, 2001  
Title: FLEXIBLE JOINT ASSEMBLY, SERVICE, AND SYSTEM USING A  
FLEXIBLE JOINT ASSEMBLY

**Mail Stop Appeal Brief-Patents**  
United States Patent and Trademark Office  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria VA 22314

**BRIEF ON APPEAL UNDER 37 C.F.R § 1.192**

Appellant is appealing the rejection of claims 1, 7, 10, 12 and 41 dated May 8, 2006. A Notice of Appeal was filed on August 8, 2006. A Notice of Panel Decision from Pre-Appeal Brief Review was mailed September 26, 2006. Appellant requests that the rejection of these claims be reversed.

**(i) Real Party in Interest**

The real party of interest is Prime Solutions LLC, of Troy, Michigan, the assignee of the above-captioned application.

**(ii) Related Appeals and Interferences**

There are no related appeals or interferences.

**(iii) Status of Claims**

Claims 1, 7, 10, 12, and 41 are pending and are being appealed. Claims 1 and 41 are in independent form.

**(iv) Status of Amendments**

No amendments were made to the claims subsequent to the rejection mailed May 8, 2006.

**(v) Summary of Claimed Subject Matter**

Applicant has discovered flexible joint assemblies that can withstand relatively large pressure differentials for the transport of pressurized fluids. The flexible joint assemblies can facilitate transport of pressurized fluids to a variety of locations, to physically confined locations, or to locations that shift with time.

**(vi) Grounds of Rejection to be Reviewed on Appeal**

1. Whether claims 1, 7, 10, and 12 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 1,914,736 to Coutu ("Coutu").
2. Whether claims 1, 7, 10, 12 and 41 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 1,532,195 to Morrison ("Morrison") in view of U.S. Patent No. 2,971,701 to Shames et al. ("Shames").

**(vii) Arguments**

1. Whether claims 1, 7, 10, and 12 are unpatentable under 35 U.S.C. § 103(a) over Coutu.

The Examiner has maintained his rejection of claims 1, 7, 10, and 12 under 35 U.S.C. § 103(a) over U.S. Patent No. 1,914,736 to Coutu. See pages 2-3 of the Office Action mailed May 8, 2006. Claims 7, 10, and 12 depend from independent claim 1.

The Examiner contends that "the term 'adjacent' is so broad that the thread and socket of Coutu anticipate the claim." See page 6 of the Office Action. Coutu's invention describes a retaining ring **8** that has a threadable connection on an exterior surface of a socket, which is not adjacent to the ball. See Fig. 3 of Coutu. Coutu does not teach or suggest a threadable connection to the surface of the receiving member adjacent to the central fluid connector which refers to a surface that is interior to the receiving member. See Fig. 2A of the present invention. Accordingly, Coutu does not teach or suggest a retaining ring compressing a seal by threadably connecting to a surface of the socket adjacent to the central fluid conductor and the ball in claim 1.

As such claim 1 and claims that depend therefrom are patentable over Coutu. Appellant respectfully requests the withdrawal of the rejection.

2. Whether claims 1, 7, 10, 12 and 41 are unpatentable under 35 U.S.C. § 103(a) over Morrison in view of Shames.

The Examiner has maintained his rejection of claims 1, 7, 10, 12 and 41 under 35 U.S.C. § 103(a) over Morrison in view of Shames. See pages 4-5 of the Office Action. Claims 7, 10, and 12 depend from independent claim 1. Claim 41 is an independent claim.

The Examiner contends that “the term ‘adjacent’ is broad enough to be anticipated by the ring 28, socket 15 and fluid connector 22 of Morrison, which are all ‘adjacent’ one another as they are in radial contact with each other.” See page 6 of the Office Action. Morrison discloses “an improved type of swivel joint coupling of the ball and socket construction.” See page 1, lines 14-16 of Morrison. Contrary to the Examiner’s assertions, Morrison discloses using a collar 12 that threadably connects to a surface opposite a fluid connector. See Figure 1 of Morrison. Morrison does not teach or suggest a retaining ring threadably connecting to a surface of the socket adjacent to the central fluid conductor.

Shames does not remedy the above-mentioned defects in Morrison. Shames discloses a coupling nut 76" that threadably connects to an outer surface or exterior surface of aerator 104, which is the surface opposite to connector 102. See Figures 4 and 5 of Shames. Shames does not teach or suggest a retaining ring threadably connecting to a surface of the socket adjacent to the central fluid conductor. See claims 1 and 41.

None of the above-cited references, alone or in combination, teach or suggest the flexible joint assembly described in claims 1 and 41. Accordingly, claims 1 and 41 and claims that depend therefrom are patentable over the Morrison and Shames. Appellant respectfully requests reconsideration and withdrawal of this rejection.

Applicant : Steven M. Knowles  
Serial No. : 09/982,928  
Filed : October 22, 2001  
Page : 4 of 9

Attorney's Docket No.: 14921.0015

Conclusion

The rejection of all claims should be reversed for the reasons given above. The Commissioner is authorized to charge \$250 to the Deposit Account 19-4293 for the appeal brief fee. Should any further fees be required, please charge Deposit Account **19-4293**.

Respectfully submitted,

Date: 10-26-06



Harold H. Fox  
Reg. No. 41,498

**Customer No. 27890**  
Steptoe & Johnson LLP  
1330 Connecticut Avenue, NW  
Washington, DC 20036-1795  
Phone: 202-429-3000  
Fax: 202-429-3902

**(viii) Claims Appendix**

1. A flexible joint assembly for conducting a fluid, comprising:
  - a joint assembly inlet;
  - a joint assembly outlet; and
  - a fluid flow path between the inlet and the outlet, the fluid flow path including:
    - a first pivot joint;
    - a second pivot joint, wherein each of the first pivot joint and second pivot joint independently comprises a ball and socket joint, wherein each ball and socket joint comprises:
      - a socket;
      - a ball received in the socket;
      - a seal between the ball and the socket, and each ball and socket joint further comprises a compressing member axially compressing the seal between the ball and the socket and a retaining ring compressing the seal between the ball and the socket;
  - and
  - a unitary central fluid conductor fluidly coupling the pivot joints wherein the central fluid conductor couples to a first ball of the first pivot joint and a second ball of the second pivot joint, and each retaining ring compresses the seal by threadably connecting to a surface of the socket adjacent to the central fluid conductor and the ball, wherein the central fluid conductor is shorter than 10 centimeters,

wherein the pivot joints together provide greater than a 60° bend between the inlet and the outlet and each pivot joint independently provides greater than a 35° bend in the fluid flow path.

Claims 2-6. (Canceled).

7. The flexible joint assembly of claim 1 wherein the first pivot joint and the second pivot joint together provide a substantially 90° bend between the inlet and the outlet.

Claims 8-9. (Canceled)

10. The flexible joint assembly of claim 1 wherein the joint assembly inlet and the joint assembly outlet include a fitting.

Claim 11. (Canceled)

12. The flexible joint assembly of claim 1 wherein each pivot joint independently provides greater than a 40° bend in the fluid flow path.

Claims 13-40. (Canceled)

41. A flexible joint assembly comprising:

    a joint assembly inlet;

    a joint assembly outlet; and

    a fluid flow path between the inlet and the outlet, the flow path including:

        a first pivot joint;

        a second pivot joint; and

        a unitary central fluid conductor fluidly coupling the pivot joints,

each of the first pivot joint and second pivot joint including:

    an inner member;

    a receiving member dimensioned to pivotally receive at least part of the inner member;

    a sealing member sealing between the inner member and the receiving member;

    a supporting member supporting the sealing member substantially uniformly over the entire length of the seal between the inner member and the receiving member, and

    a retaining ring compressing the supporting member and the sealing member by threadably connecting to a surface of the receiving member adjacent to the central fluid connector and the inner member; the central fluid conductor includes a tubular central portion that defines a longitudinal channel between a first conductor end terminated by a first ball and a second conductor end terminated by a second ball.

Applicant : Steven M. Knowles  
Serial No. : 09/982,928  
Filed : October 22, 2001  
Page : 8 of 9

Attorney's Docket No.: 14921.0015

Claims 42-43. (Canceled)

Applicant : Steven M. Knowles  
Serial No. : 09/982,928  
Filed : October 22, 2001  
Page : 9 of 9

Attorney's Docket No.: 14921.0015

**(ix) Evidence Appendix**

None.

**(x) Related proceedings Appendix**

None.